IN THE CLAIMS:

Please cancel Claim 9, without prejudice to or disclaimer of the subject matter recited therein.

Please amend Claims 1 and 7, and add new Claim 12, as follows.

1. (Currently Amended) A measuring device comprising:

a light source for emitting a linearly polarized light;

polarization orientation setting means for switching the polarization orientation of the light flux from said light source means between at least two orientations and making the light flux exit;

light re-combining means for re-combining light fluxes split from the light flux from said polarization orientation setting means after passing the light fluxes through an object to be measured and a reference surface ~~to obtain interference lights~~;

~~said light re-combining~~ analyzing means for switching the polarization orientation so as to allow to pass only the same polarized component as the polarized light incident on the object to be measured~~, out of the interference lights obtained through said light synthesizing means~~;

image pickup means for detecting interference information of the light which has passed through said analyzing means; and

calculating means for calculating at least one of the average wavefront and the retardation of the object to be measured, on the basis of the wavefront information obtained when using the light in the two polarization states switched by said polarization orientation setting means.

2. (Previously Presented) A measuring device in accordance with claim 1, wherein said light synthesizing means comprises a twyman-Green-type interferometer.

3. (Previously Presented) A measuring device in accordance with claim 1, wherein said light synthesizing means comprises a Fizeau-type interferometer.

4. (Previously Presented) A measuring device comprising:

a polarization orientation setting member, which is disposed in the optical path for light fluxes including a light flux incident on an object to be measured, and which has a function of switching the polarization orientation of the light fluxes including the light flux incident on the object to be measured between at least two orientations, and making the light fluxes exit;

an image pickup member;

an analyzer, which is disposed on the light incident side of said image pickup member, and which has a function of switching the polarization orientation so as to allow to pass only the same polarized component as the polarized light incident on the object to be measured, out of the interference light fluxes including the light flux which is made to exit from the object to be measured; and

a calculating section connected to said image pickup member, said calculating section calculating at least one of the average wavefront and the retardation of the object to be measured, on the basis of the measured wavefront obtained from the output of said image pickup member, when using the light fluxes in the at least two polarization orientations switched by said polarization orientation setting member.

5. (Previously Presented) A measuring device in accordance with claim 4, wherein the interference light fluxes are formed by a twyman-Green-type interferometer.

6. (Previously Presented) A measuring device in accordance with claim 4, wherein the interference light fluxes are formed by a Fizeau-type interferometer.

7. (Currently Amended) A measuring method comprising:

arranging an object to be measured;

measuring a wavefront of a first linearly polarized light from the object to be measured; ~~and~~

measuring a wavefront of a second linearly polarized light from the object to be measured, wherein the first and the second linearly polarized lights are made incident on the object in mutually different polarization orientations; and

~~wherein the polarization orientation of the first and second linearly polarized lights differ~~

calculating at least one of a retardation and an average wavefront of the object on the basis of the measured wavefront of the first and the second linearly polarized lights.

8. (Previously Presented) A measuring method in accordance with claim 7, wherein the difference of the polarization orientation between the first and second linearly polarized lights is 90 degrees.

9. (Canceled)

10. (Previously Presented) An interferometer comprising:

a light source for emitting linearly polarized light;

polarization orientation changing means for changing a polarization orientation of the polarized light incident on an object to be measured; and

image pickup means for detecting the polarized light after passing through an object to be measured as an interference signal.

11. (Previously Presented) An interferometer in accordance with claim 10, further comprising a calculating means for calculating at least one of a retardation and an average wavefront of the object to be measured.

12. (New) A measuring method comprising the step of:

arranging an object to be measured;

making linearly polarized light incident on the object;

passing the light from the object through an analyzer so as to allow to pass only the same polarized component as the polarized light incident on the object;

measuring a wavefront of the light passed through the analyzer; and

calculating at least one of a retardation and an average wavefront from the object on the basis of the measured wavefront.